

## 10/24/13 Agenda

- Warm Up
- Review Homework - Worksheet 1 - Classifying Triangles
- Section 4.1 day 2 - Angle Measurement Theorems
- Review Test
- Start Homework - Worksheet 2 - Angle Measures

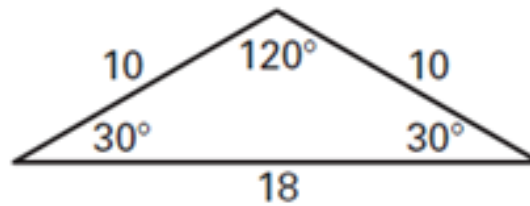
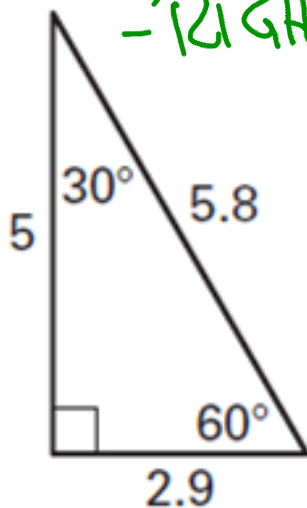
Warm-Up: Classify by both sides and

- SCALENE Angles

- OBTUSE

- RIGHT

- ISOSCELES



## Unit 4 Day 2

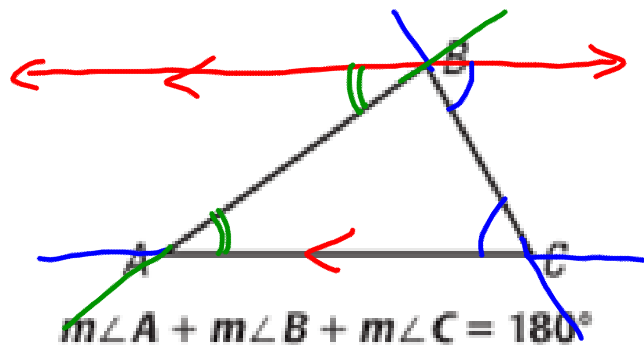
## Angle Sum Theorems

### Target 4B

Solve for the missing angle in a triangle using the Triangle Sum Theorem and solve for the exterior angle of a triangle

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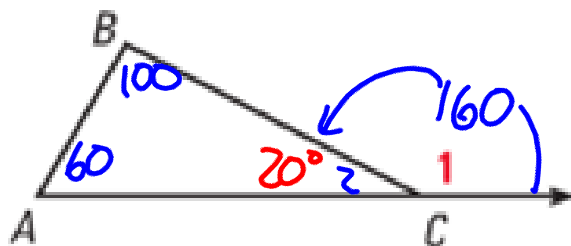
**Triangle Sum Theorem**- the sum of the angles inside a triangle =  $180^\circ$



**Exterior Angle Theorem**- the supplement of an angle of a triangle is equal to the two other angles of the triangle.

Proof

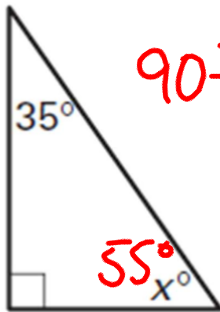
$$m\angle 1 = m\angle A + m\angle B$$



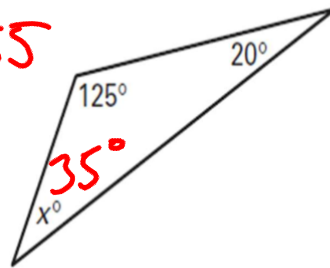
$$\begin{array}{rcl}
 \angle A + \angle B + \angle 2 & = & \angle 1 + \angle 2 \\
 -\angle 2 & & -\angle 2 \\
 \hline
 \angle A + \angle B & = & \angle 1
 \end{array}$$

find the value of x

$$180 - 90 - 35 = 55$$

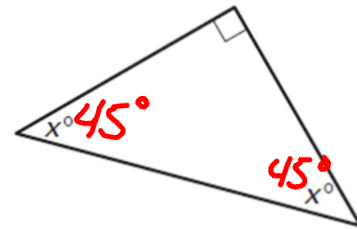


$$90 - 35 = 55$$



$$90 + 35 = 125$$

$$\begin{array}{r} 180 \\ - 125 \\ \hline 55 \end{array}$$

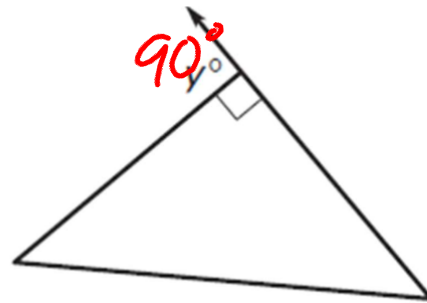
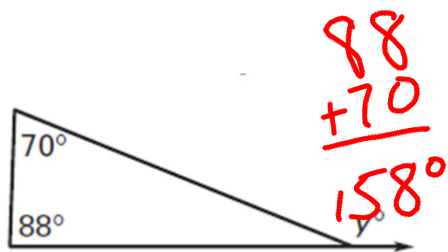


$$x + x + 90 = 180$$

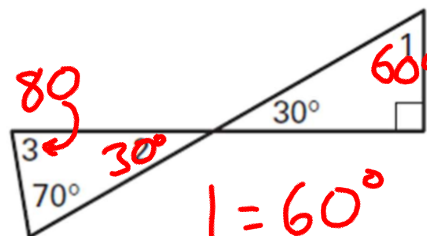
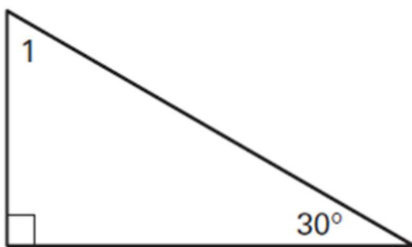
$$2x + 90 = 180$$

$$2x = 90$$

find the value of  $y$

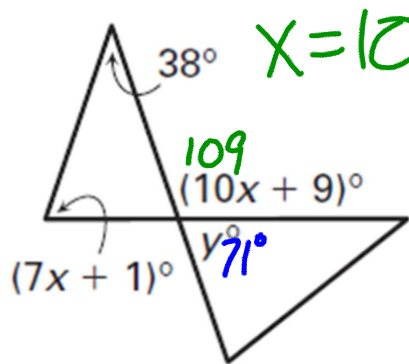


find the value of the numbered  
angle(s)



$$\begin{aligned} 1 &= 60^\circ \\ 2 &= 30^\circ \\ 3 &= 80^\circ \end{aligned}$$

Challenge – find X and Y



$$X = 10$$

$$Y = 109$$

$$\begin{array}{r} 7x + 1 + 38 = 10x + 9 \\ -7x \quad \quad -7x \\ \hline 39 \quad \quad 3x + 9 \\ -9 \quad \quad -9 \\ \hline 30 = 3x \\ \underline{3} \quad \quad \underline{3} \end{array}$$



Challenge – find X and Y

